

PATENT

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Attorney Docket No. IMMR-086/02US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

re application of Louis B. ROSENBERG et al.

Serial No.: 10/782,878

Examiner: Unassigned

Filed: February 23, 2004

Art Unit: 2672

Confirmation No. 7078

For: **DESIGNING FORCE SENSATIONS FOR FORCE FEEDBACK COMPUTER APPLICATIONS**

U.S. Patent and Trademark Office
220 20th Street S.
Customer Window
Crystal Plaza Two, Lobby, Room 1B03
Arlington, VA 22202

INFORMATION DISCLOSURE STATEMENT TRANSMITTAL

Enclosed is an Information Disclosure Statement and accompanying Form PTO/SB/08A for the above-identified patent application.

- ☒ In accordance with 37 C.F.R. §1.97(b), no additional fee for submission of the IDS is required.
- ☐ In accordance with 37 C.F.R. §1.97(c), also enclosed is:
 - ☐ the fee of \$180.00 as set forth in 37 C.F.R. §1.17(p); or
 - ☐ a statement as specified in 37 C.F.R. §1.97(e).
- ☐ In accordance with 37 C.F.R. §1.97(d), a statement as specified in 37 C.F.R. §1.97(e) and the fee of \$180.00 as set forth in 37 C.F.R. §1.17(p) are also enclosed.
- ☐ Check No. ___ in the amount of \$___ for the total fee is attached.
- ☐ A return receipt postcard is also enclosed.
- ☐ Please charge \$___ to Deposit Account No. 50-1283 for the total fee. This paper is being submitted in duplicate.

The Commissioner is hereby authorized to charge any appropriate fees under 37 C.F.R. §§1.16, 1.17, and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 50-1283.

Dated: October 7, 2004

Cooley Godward LLP
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Respectfully submitted,
COOLEY GODWARD LLP

By:



Erik B. Milch
Reg. No. 42,887

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE



In re application of Louis B. ROSENBERG et al.

Serial No.: 10/782,878

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**INFORMATION DISCLOSURE STATEMENT
UNDER 37 C.F.R. §1.97(b)**

In accordance with the duty of disclosure set forth in 37 C.F.R. §1.56,
Applicant(s) hereby submits the following information in conformance with 37 C.F.R.
§§1.97 and 1.98.

- ☒ Pursuant to 37 C.F.R. §1.98, a copy of each document cited in the attached Form PTO/SB/08A (1 of 2) is provided on the enclosed CD.
- ☒ No copies of the publications listed on the attached Form PTO/SB/08A (2 of 2) are being provided pursuant to 37 C.F.R. §1.98(d) because the publications were previously cited by or submitted to the Office in prior Application Serial Nos. 09/734,630 (now U.S. Patent No. 6,697,086 B2), 08/846,011 (now U.S. Patent No. 6,147,674) and/or 08/566,272 (now U.S. Patent No. 5,734,373) to which the above-identified application claims priority under 35 U.S.C. §120.
- ☐ No copies of any U.S. patents or U.S. patent application publications listed on the attached Form PTO/SB/08A are being provided pursuant to 37 C.F.R. §1.98 because this application was filed after June 30, 2003.
- ☐ Publication(s) ___ listed on the attached Form PTO/SB/08A were cited in a foreign search or examination report corresponding to ___ application serial no. ___ and mailed on ___.
- ☐ Enclosed is a copy of a non-English publication(s) ___. Pursuant to §609 of the M.P.E.P., Applicant submits the attached foreign search or examination report, which cites such non-English language publication(s).

- ☐ Enclosed is a copy of a non-English publication(s) _____. English language publication ____ (copy enclosed) claims priority from this non-English publication.
- ☐ Enclosed is an explanation of non-English publication(s) ____ for which an English translation is not available.
- ☐ Enclosed is an English translation of non-English publication(s) ____ cited in the attached Form PTO/SB/08A.
- ☐ Enclosed is a copy of pending patent Application Serial No. _____.

This Information Disclosure Statement is filed within any one of the following time periods:

- ☐ within three months from the filing date of this national application other than a CPA under 37 C.F.R. § 1.53(d);
- ☐ within three months from the date of entry of the national stage as set forth in 37 C.F.R. § 1.491 in this international application;
- ☒ before the mailing date of a first office action on the merits; or
- ☐ before the mailing of a first office action after the filing of a request for continued examination under 37 C.F.R. § 1.114.


It is respectfully requested that the Examiner consider the above-noted information and return an initialed copy of the attached Form PTO/SB/08A to the undersigned.

Dated: October 7, 2004

Cooley Godward LLP
One Freedom Square
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Respectfully submitted,
COOLEY GODWARD LLP

By: _____


Erik B. Milch
Reg. No. 42,887



(1 of 2)

PTO/SB/08A (10-01)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

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Sheet 1 of 3

Complete if Known

Application Number	10/782,878
Filing Date	February 23, 2004
First Named Inventor	Louis B. Rosenberg
Art Unit	2672
Examiner Name	Unassigned
Attorney Docket Number	IMMR-086/02US

U.S. PATENT DOCUMENTS					
		Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
Examiner	Cite No. ¹	Number Kind Code ² (if known)			
		6,422,941	7/23/2002	Thomer et al.	
		6,160,489	12/12/2000	Perry et al.	
		6,111,577	8/29/2000	Zilles et al.	
		5,690,582	11/25/1997	Ulrich et al.	
		5,575,761	11/19/1996	Hajianpour	
		5,437,607	8/1/1995	Taylor	
		5,436,622	7/25/1995	Gutman et al.	
		5,283,970	2/8/1994	Aigner	
		5,186,695	2/16/1993	Mangseth et al.	
		5,175,459	12/29/1992	Danial et al.	
		5,165,897	11/24/1992	Johnson	
		5,022,384	6/11/1991	Freels	
		4,885,565	12/5/1989	Embach	
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		4,464,117	8/7/1984	Foerst	
		4,333,070	6/1/1982	Barnes	
		4,262,549	4/21/1981	Schwellenbach	
		4,127,752	11/28/1978	Lowthorp	
		2,972,140	2/14/1961	Hirsch	

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code ³	Number ⁴	Kind Code ⁵ (if known)			
		JP	H2-185278		7/19/1990	Taito Corporation	
		JP	H4-8381		1/13/1992	Epoch Co. and Key- Planning Co.	
		JP	H7-24147		1/27/1995	Sega Corporation	
		JP	H5-192449		8/3/1993	Taito Corporation	

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¹ Applicant's unique citation designation number (optional). ² Kind Codes of U.S. Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

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Attorney Docket Number	IMMR-086/02US

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
		PATRICK, "Design, Construction, and Testing of a Fingertip Tactile Display for Interaction with Virtual and Remote Environments," <i>Master of Science Thesis</i> , MIT, Aug. 1990, archived Nov. 8, 1990.
		CALDER, "Design of A Force-Feedback Touch-Introducing Actuator For Teleoperator Robot Control," <i>Bachelor of Science Thesis</i> , MIT, May 1983, archived June 23, 1983.
		WIKER, "Teletouch Display Development: Phase 1 Report," <i>Technical Report 1230</i> , Naval Ocean Systems Center, San Diego, July 1988.
		BLISS, "Optical-to-Tactile Image Conversion for the Blind," <i>IEEE Transactions on Man-Machine Systems</i> , Vol. MMS-11, No. 1, March 1970.
		JOHNSON, "Shape-Memory Alloy Tactile Feedback Actuator," <i>Armstrong Aerospace Medical Research Laboratory</i> , AAMRL-TR-90-039, August, 1990.
		KONTARINIS et al., "Tactile Display of Vibratory Information in Teleoperation and Virtual Environments," <i>PRESENCE</i> , 4(4):387-402, Harvard Univ., 1995.
		AUKSTAKALNIS et al., "Silicon Mirage: The Art and Science of Virtual Reality," ISBN 0-938151-82-7, pp. 129-180, 1992.
		EBERHARDT et al., "Inducing Dynamic Haptic Perception by The Hand: System Description and Some Results," <i>DSC-Vol. 55-1, Dynamic Systems and Control: Volume 1</i> , ASME 1994.
		GOBEL et al., "Tactile Feedback Applied to Computer Mice," <i>International Journal of Human-Computer Interaction</i> , Vol. 7, No. 1, pp. 1-24, 1995.
		PIMENTEL et al., "Virtual Reality: through the new looking glass," 2 nd Edition; McGraw-Hill, ISBN 0-07-050167-X, pp. 41-202, 1994.
		"Cyberman Technical Specification," <i>Logitech Cyberman SWIFT Supplement to Logitech Mouse Technical Reference and Programming Guide</i> , 4/5/1994.
		OUHYOUNG et al., "The Development of A Low-Cost Force Feedback Joystick and Its Use in the Virtual Reality Environment," <i>Proceedings of the Third Pacific Conference on Computer Graphics and Applications, Pacific Graphics '95</i> , Seoul, Korea, 21-24 August 1995.
		KACZMAREK et al., "Tactile Displays," <i>Virtual Environment Technologies</i> , Chap. 9, pp. 349-414.
		LAKE, "Cyberman from Logitech," at http://www.ibiblio.org/GameBytes/issue21/greviews/cyberman.html , 1994.
		"Component Maintenance Manual With Illustrated Parts List, Coaxial Control Shaker Part No. C-25502," Safe Flight Instrument Corporation, Revised 28 January 2002 (3 pages).

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Examiner Name	Unassigned
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OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
		"Technical Manual Overhaul Instructions With Parts Breakdown, Coaxial Control Shaker Part No. C-25502," Safe Flight Instrument Corporation, Revised 15 July 1980 (23 pages).
		SCANNELL, "Taking a Joystick Ride," <i>Computer Currents</i> , Boston Edition, Vol. 9, No. 11, November 1994
		ROSENBERG, "Virtual Fixtures: Perceptual Overlays Enhance Operator Performance In Telepresence Tasks," <i>Ph.D. Dissertation</i> , Stanford University, June 1994.

Examiner Signature		Date Considered	
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		Number Kind Code ² (if known)			
		2,906,179	09-1959	Bower	
		3,490,059	01-1970	Paulsen et al.	
		3,531,868	10-1970	Stevensen	
		3,875,488	04-1975	Crocker et al.	
		3,890,958	06-1975	Fister et al.	
		3,919,691	11-1975	Noll	
		3,944,798	03-1976	Eaton	
		4,125,800	11-1978	Jones	
		4,148,014	04-1979	Burson	
		4,216,467	08-1980	Colston	
		4,398,889	08-1983	Lam et al.	
		4,448,083	05-1984	Hayashi	
		4,477,043	10-1984	Repperger	
		4,477,973	10-1984	Davies	
		4,550,221	10-1985	Mabusth	
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		4,601,206	07-1986	Watson	
		4,632,341	12-1986	Repperger et al.	
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		4,679,331	07-1987	Koontz	
		4,688,983	08-1987	Lindbom	
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		4,704,909	11-1987	Grahn et al.	
		4,750,487	06-1988	Zanetti	
		4,769,763	09-1988	Trieb et al.	
		4,787,051	11-1988	Olson	
		4,791,934	12-1988	Brunnett	
		4,798,919	01-1989	Miessler et al.	
		4,800,721	01-1989	Cemenska et al.	
		4,803,413	02-1989	Kendig et al.	

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		4,811,608	03-1989	Hilton	
		4,819,195	04-1989	Bell et al.	
		4,839,838	06-1989	LaBiche et al.	
		4,849,692	07-1989	Blood	
		4,868,549	09-1989	Affinito et al.	
		4,879,556	11-1989	Duimel	
		4,888,877	12-1989	Enderle et al.	
		4,891,889	01-1990	Tomelleri	
		4,896,554	01-1990	Culver	
		4,907,970	03-1990	Meenen, Jr.	
		4,907,973	03-1990	Hon	
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		4,942,545	07-1990	Sapia	
		4,945,305	07-1990	Blood	
		4,945,501	07-1990	Bell et al.	
		4,961,138	10-1990	Gorniak	
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		5,088,046	02-1992	McMurtry et al.	
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		5,126,948	06-1992	Mitchell et al.	

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		5,128,671	07-1992	Thomas, Jr.	
		5,131,844	07-1992	Marinaccio et al.	
		5,132,672	07-1992	Clark	
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		5,142,931	09-1992	Menahern	
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		5,251,127	10-1993	Raab	
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		5,259,120	11-1993	Chapman et al.	
		5,259,894	11-1993	Sampson	
		5,262,777	11-1993	Low et al.	
		5,264,768	11-1993	Gregory et al.	
		5,275,565	01-1994	Moncrief	
		5,289,273	02-1994	Lang	

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Sheet **4** of **11****Complete if Known**

Application Number	10/782,878
Filing Date	February 23, 2004
First Named Inventor	Louis B. Rosenberg
Art Unit	2672
Examiner Name	Unassigned
Attorney Docket Number	IMMR-086/02US

U.S. PATENT DOCUMENTS					
Examiner	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number Kind Code ² (if known)			
		5,296,846	03-1994	Ledley	
		5,341,459	08-1994	Backes	
		5,354,162	10-1994	Burdea et al.	
		5,379,663	01-1995	Hara	
		5,384,460	01-1995	Tseng	
		5,389,865	02-1995	Jacobus et al.	
		5,396,266	03-1995	Brimhall	
		5,396,267	03-1995	Bouton	
		5,397,323	03-1995	Taylor et al.	
		5,402,582	04-1995	Raab	
		5,405,152	04-1995	Katanics et al.	
		5,412,880	05-1995	Raab	
		5,414,337	05-1995	Schuler	
		5,417,696	05-1995	Kashuba et al.	
		5,428,748	06-1995	Davidson et al.	
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		5,436,542	07-1995	Petelin et al.	
		5,436,640	07-1995	Reeves	
		5,445,166	08-1995	Taylor	
		5,451,924	09-1995	Massimino et al.	
		5,459,382	10-1995	Jacobus et al.	
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		5,591,924	01-1997	Hilton	
		5,596,347	01-1997	Robertson et al.	
		5,623,582	04-1997	Rosenberg	

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Sheet **5** of **11****Complete if Known**

Application Number	10/782,878
Filing Date	February 23, 2004
First Named Inventor	Louis B. Rosenberg
Art Unit	2672
Examiner Name	Unassigned
Attorney Docket Number	IMMR-086/02US

U.S. PATENT DOCUMENTS

Examiner	Cite No. ¹	Document Number Number Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		5,625,576	04-1997	Massie et al.	
		5,629,594	05-1997	Jacobus et al.	
		5,642,469	06-1997	Hannaford et al.	
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		5,666,138	09-1997	Culver	
		5,666,473	09-1997	Wallace	
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		5,760,764	06-1998	Martinelli	
		5,767,839	06-1998	Rosenberg	
		5,769,640	06-1998	Jacobus et al.	
		5,781,172	07-1998	Engel et al.	
		5,790,108	08-1998	Salcudean et al.	
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		5,844,392	12-1998	Peurach et al.	
		5,889,670	03-1999	Schuler et al.	

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code ³	Number ⁴	Kind Code ⁵ (if known)			
		JP	4-34610				
		GB	2254911				
		WO	9520787				
		WO	9616397				
		WO	9622591				

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Sheet **6** of **11****Complete if Known**

Application Number	10/782,878
Filing Date	February 23, 2004
First Named Inventor	Louis B. Rosenberg
Art Unit	2672
Examiner Name	Unassigned
Attorney Docket Number	IMMR-086/02US

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code ³	Number ⁴	Kind Code ⁵ (if known)			
		WO	9642078				
		EP	0626634	A2			
		EP	0875819	A1			
		WO	9502801				
		WO	9520788				
		WO	9532459				
		WO	9731333				

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Sheet **7** of **11****Complete if Known**

Application Number	10/782,878
Filing Date	February 23, 2004
First Named Inventor	Louis B. Rosenberg
Art Unit	2672
Examiner Name	Unassigned
Attorney Docket Number	IMMR-086/02US

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	
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Sheet **8** of **11****Complete if Known**

Application Number	10/782,878
Filing Date	February 23, 2004
First Named Inventor	Louis B. Rosenberg
Art Unit	2672
Examiner Name	Unassigned
Attorney Docket Number	IMMR-086/02US

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Sheet **9** of **11****Complete if Known**

Application Number	10/782,878
Filing Date	February 23, 2004
First Named Inventor	Louis B. Rosenberg
Art Unit	2672
Examiner Name	Unassigned
Attorney Docket Number	IMMR-086/02US

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

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Sheet **10** of **11****Complete if Known**

Application Number	10/782,878
Filing Date	February 23, 2004
First Named Inventor	Louis B. Rosenberg
Art Unit	2672
Examiner Name	Unassigned
Attorney Docket Number	IMMR-086/02US

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

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Sheet 11 of 11

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Application Number	10/782,878
Filing Date	February 23, 2004
First Named Inventor	Louis B. Rosenberg
Art Unit	2672
Examiner Name	Unassigned
Attorney Docket Number	IMMR-086/02US

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Examiner Signature		Date Considered	
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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